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# A LETTER

TO THE

PRESIDENT AND FELLOWS

OF THE

ROYAL COLLEGE OF PHYSICIANS,

IN RELATION TO

THE EVIDENCE, CITED IN THEIR LATE REPORT,

ON THE TREATMENT OF

## EPIDEMIC CHOLERA.

---

BY JOSEPH AYRE, M.D.,

LICENTIATE OF THE COLLEGE—CHAIRMAN OF THE SANITARY COMMITTEE  
OF THE LOCAL BOARD OF HEALTH—AND MANY YEARS PHYSICIAN TO THE GENERAL  
HOSPITAL, DISPENSARY, AND LYING-IN-CHARITY OF HULL.

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LONDON:

J. CHURCHILL, PRINCE'S-STREET, SOHO.

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# ADVERTISEMENT.

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WHEN the following pages were printed, and were already prepared for publication, I had sent me a copy of "the INSTRUCTIONAL MINUTES for the Prevention and Treatment of Epidemic Cholera," just issued by the General Board of Health, in which, apparently on the authority of the College Report, it is represented, "that if," to quote the words of the Instructional Minute (page 2), "the diarrhœal stage should pass into developed Cholera, little can be done by the utmost medical skill to avert a fatal termination." This Instructional Minute of the General Board of Health is addressed, for their guidance, to the Boards of Guardians in England and Wales, and to the Parochial Boards in Scotland; and contains precisely the opinion which it is the purpose of the following letter to combat and disprove; and since there is much reason to fear that this opinion, thus authoritatively pronounced, and so widely to be circulated, will have an unfavourable effect upon the relief to be rendered to the sick, I can but congratulate myself on being at this time so opportunely engaged in pointing out the error of this opinion; believing, as I most unfeignedly do, that the facts contained in the following pages will amply effect this; and that, on the correction of the error, that the authorities of the Board will not only rescind the objectionable minute, but will also lend the sanction of their name and authority to the treatment by myself and others so long recommended and employed. On this subject, indeed, of the treatment, and with the pestilence among us, no indulgence can be vouchsafed to a negligent or protracted consideration of the question; and it is with no measured earnestness I would urge upon the Government the necessity of a searching enquiry concerning it.

J. A.





TO THE PRESIDENT AND FELLOWS OF THE ROYAL  
COLLEGE OF PHYSICIANS.

.....

GENTLEMEN,—The inquiry which you appointed to be undertaken for the purpose of ascertaining the appropriate treatment of epidemic cholera has just been closed, with a report drawn up by Dr. Gull, in which he states his belief, as the result of that inquiry, that no remedy has hitherto been found for that disease. But whether this most important conclusion, published to the world under the sanction of your name, and with the fiat of your *imprimatur*, be a correct one, and based on facts duly collected and considered, are questions which merit the most searching inquiry; and I trust no apology will be needed from me for my now engaging in it.

In the list of medicines which have claimed to be accounted remedial in cholera, the foremost place in your report is given to calomel; and some notice has been bestowed upon my name, as the author and advocate of its use, when administered in doses small and frequently repeated. To prove, however, that calomel is inefficient, in whatever dose, and in whatever manner it is employed, Dr. Gull has presented us

with reports sent in to him by different medical gentlemen, in which it is stated that my treatment was pursued by them; and, on the faith of such having been the fact, he has given the result of their assumed trials of it as an appropriate test of its inefficiency. But in his summing up he has wholly overlooked the important duty of sifting the evidence, and of thus ascertaining beyond the reach of all contradiction, that the treatment designated as mine was really and truly mine, or whether it was not—what I shall presently prove it to have been—essentially different from that treatment in every particular which can constitute resemblance. The task, therefore, which I shall now assign to myself, will be to show that calomel is indeed *not* remedial in cholera when given in large doses, or in small ones at wide intervals; but that, when administered in small doses according to prescribed conditions, and without any other adjuvant than cold water *ad libitum*, it exhibits a remedial power well nigh approaching to that of a specific: so that, in very truth, the cases which Dr. Gull has brought forward in support of his views tell so strongly against the conclusion which he aims to establish, that I have only to avail myself of them as arguments to prove the truth of the position, that calomel, when rightly given, is truly a remedy in this disease.

Before, however, proceeding further, I shall here briefly repeat, for the sake of obviating all misconception on the subject, the leading particulars of what is denominated my plan of treatment; which consists, during the stage of collapse, in giving one or two grains



of calomel every five or ten minutes, with one or two drops of laudanum with the first few doses of the drug, and in perseveringly continuing the same dose at the same intervals of time, until the symptoms of collapse become materially subdued. This plan I have uninterruptedly pursued from the first to the last patient I ever attended in the disease, amounting to a very large number; and my reason for giving the small dose of the calomel was, that large ones were rejected from the stomach, and I repeated it frequently because it was small, and that thus the action of the medicine on the stomach might be constantly kept up in a disease whose duration is to be counted by minutes. I gave the minute dose of the opiate to enable the stomach to retain the calomel, and prevent its too early descent into the bowels, and not as a sedative. I abstained from the use of all auxiliary treatment in my early cases, that I might not compromise the conclusion at which I desired to arrive—as to the remedial power of calomel; and I have uniformly avoided them since, because I believed that calomel in doses small and frequently repeated was an effectual remedy. I have never given stimulants in any form, because I found them not to be necessary, and believed they would prove pernicious when, from the long duration of the collapse, and the delay in commencing the treatment, consecutive fever might be feared; and, lastly, I fixed no other limit to the quantity of calomel which I gave than that which the duration of the collapse prescribed, having become early assured

that, pending its continuance, no absorption of the calomel into the system takes place; that, whilst it is so given, no salivation or other inconvenience is induced by it; and that no extremity to which a patient may be reduced can justify our withholding or abandoning the use of it.

This, then, is the plan of treatment which I pursued and encouraged others to pursue, and to which such frequent reference is made in your report; and to the strict fulfilment of the conditions it involves, and which I took no inconsiderable pains to enjoin, must be attributed the success of myself and the many who adopted the practice. That the author of the report was well informed on all these points, I cannot entertain a doubt, from the very many communications made by me and others to THE LANCET journal, whose pages he doubtless consulted, and from the information which I afforded him at his request on all that related to my plan of treatment, with its results. Yet, without the consideration due to a subject so important, Dr. Gull has given, to use his own words, "the results of 365 cases treated by small and frequently-repeated doses of calomel," and has given in alphabetical order the names of twenty gentlemen who were engaged in the treatment of them. In looking through this list of physicians and general practitioners, and the results of their treatment respectively, as announced to be with calomel "in doses small and frequently repeated," I was not a little astonished to find, as I am sure every one will be who has ever adopted the practice, that out of fifty-



one patients, whom six of the number are represented to have so treated, only six recovered. That the author of the report should have left unquestioned on the subject those whose failure was so enormous, and that he himself should not have ascertained the correctness of the account rendered by them, are difficulties which I will not attempt to unravel. That a serious error had been committed in attributing such a fearful mortality to the inefficiency of the treatment, became to me apparent; and it was with a view to a correction of such error, in those and others whose names are given, that I applied to them for information, requesting them to favour me by stating what was the dose of the calomel, and what the intervals of its exhibition, with the extent to which in each case it was carried, and in combination with what auxiliary treatment, whether medicinal or alcoholic. From a certain proportion of the gentlemen to whom I applied, I have received the information which I sought: it is precisely of the nature I anticipated it would be, and I shall now proceed to bring under your notice the substance of it. In giving publicity to particulars sent me, I shall only be acting in compliance with the request which accompanied some of them; and I rely with confidence that the same wish was felt by all, and that they hold the question at issue too important, and the interests of truth too sacred, to desire for a moment to withhold them. The mystery which still surrounds the disease, and the varied forms of treatment invented and employed for it, might well create distrust; and I can



readily excuse those who, from a bias toward other modes of treatment, shall have only partially carried out mine, and only failed in saving their patients by doing so.

Before entering in detail upon a consideration of the cases adduced in evidence by Dr. Gull, and as affording a standard by which to judge of what I desire to be considered the prescribed mode, I shall give the substance of the report sent in by Dr. Shearman, of Rotherham—one of the twenty in the list—to your committee, containing an account of his success in the treatment of two cases, with the details of which he kindly supplied me, and which are as follow:—

“ I have had,” Dr. Shearman reports, “ in my own practice, only two cases of true cholera, both in boys of about the age of eight. Both the boys resided in the same locality in which the cholera broke out so fearfully at its first visitation—poorly fed, and badly lodged, and both in the same house. One began with diarrhœa, which continued two days before I was consulted. I found him in a most complete collapse, with rice-water evacuations, choleraic voice, livid skin, cramps, and suppression of the kidneys. I gave two grains of calomel every five minutes pretty regularly for six hours, and let him drink freely of cold water in which a minute quantity of a neutral salt was contained. At the end of about six hours, the sickness began to abate; he became warm, the cramps moderated, and he quite recovered in five or six days. The other boy I saw in diarrhœa two days

after the first began: on his advancing into collapse, my treatment was exactly the same. This boy showed symptoms of improvement in four hours, and recovered, but his recovery was slower. I gave about thirty drops of an opiate to each."

The cases which I have now to cite, contained in your report, are of a mixed kind, and deviate more or less from the prescribed mode, and with results corresponding.

The gentleman whose practice I shall next quote stands first in the list of those said to have followed my plan of treatment; and, from a communication with which he has favoured me, I find, what indeed I had anticipated, and even felt assured of, that the reported failures in the trial of the calomel would be found to arise from the faulty mode of its employment. This gentleman informs your committee "*that he had tried the plan recommended by Dr. Ayre in three cases. It did not appear to do the least good; they all died.*"

Yet this practice, thus assumed to be like mine, consisted in giving a *scruple* (TWENTY grains) of calomel every ten minutes, and so continued during two hours, and then discontinued, because no benefit was found to arise from it. The very extraordinary error here committed, of giving twenty grains of calomel every ten minutes, instead of two grains, requires no comment, except it be to remark that it is only one amongst the many that have found a place in your report, in which the discrepancy between this treatment and mine is scarcely less remarkable.



“I shall pass on now, therefore, to cases reported, in which there are deviations from the right mode, but in an opposite direction. In illustration of this fact, and, also, as showing with what success the right method of treatment is attended, and with what failure the wrong one, I shall here take twelve cases found in the report, with the details of which I have been favoured, from the Western Dispensary, Lisson-grove. Five of these patients died, and seven recovered. Of the treatment of the five fatal cases—

The first: “Calomel every quarter of an hour; was under treatment imperfectly for six hours, and was then removed to the Infirmary.”

The second: “One dose of cajeput oil; calomel, two grains every half-hour; carbonate of soda and camphor julep, sixteen grains of calomel had been taken between three and nine in the evening; at nine the following morning had only taken thirty grains in eighteen hours.”

The third: “Calomel, two grains every quarter of an hour; carbonate of ammonia, chloride of soda; in nine hours only forty-eight grains were taken.”

The fourth: “Calomel every quarter of an hour; ammonia and other stimulants.”

The fifth: “Calomel and opium, the dose not named; chloroform internally.”

Here follow the seven cases in which recovery took place:—

The first: “Two grains of calomel every quarter of an hour; took it to the extent of ninety grains; improved rapidly under the use of the calomel, and recovered without consecutive fever.”

The second : “ Two grains every quarter of an hour were taken to the extent of 120 grains, with early and marked benefit ; the patient recovered without consecutive fever.”

The third : “ Calomel every quarter of an hour to the extent of 90 grains ; was considered convalescent, when, on the third day after his first attack, he had a relapse, equally severe as the first, from eating stewed eels. The same treatment was renewed ; the calomel was pushed to 120 grains, when the patient recovered, with a sore mouth, but with no consecutive fever.”

The fourth : “ Calomel, two grains every quarter of an hour ; recovered without consecutive fever. No quantity named of the calomel.”

The fifth : “ Calomel, two grains every quarter of an hour ; the quantity taken not named ; recovered.”

The sixth : “ Calomel, four grains, followed by two every quarter of an hour, and continued to 120 grains ; on the eighth day was discharged quite well.”

The seventh : “ Calomel, two grains every quarter of an hour ; no quantity named ; recovered ; no consecutive fever.”

In the foregoing twelve cases, it will be seen that the treatment pursued in the first five differed essentially from that employed in the seven which follow. In the fatal cases the calomel was given at wide intervals, so that in one instance only thirty grains were taken in eighteen hours ; and in another only forty-eight grains were taken in nine hours. In the seven cases where the treatment was in conformity with mine the patients all recovered.



It is not my purpose to call off your attention from the point I especially desire to prove,—namely, that Dr. Gull, in his report, has greatly erred in giving the above fatal cases as affording an appropriate test of the treatment advocated by me: but I cannot forbear pressing upon your attention a fact which I may hereafter avert to,—which is, that usually, on patients being treated in the mode recommended, no consecutive fever ensues; and that patients come out of the stage of collapse into a condition of comparative health, so that after having been livid, cold, and even pulseless on the first day of the week, they will sometimes be found before half of it is over in a condition to leave their sick room, and often, in a day or two after to pursue their accustomed avocations.

I shall next take a series of eight cases (being two more than are in the report) which were treated in the Westminster Hospital, the particulars of which have been afforded me. There are four deaths and four recoveries recorded. In the fatal cases the prescribed treatment was not attempted; and, in those that recovered, so imperfectly as to admit of consecutive fever to succeed the collapse, and thus to render the recovery more tedious.

1st.—“Collapse in an aggravated form. Ten grains of calomel every hour, with opiate; after six hours, discontinued. Fatal the same day.”

2nd.—“Usual symptoms of cholera. Five grains of calomel every hour; took eight doses. The following day more evident; consecutive fever followed. Death on the fourth day.”



3rd.—“Admitted almost in the stage of collapse; had been in the disease six hours before his admission. Calomel, three grains every half hour; after twelve doses, calomel discontinued and salines substituted; consecutive fever followed. Death on the fourth day.”

4th.—“Had the usual symptoms of cholera. Five grains of calomel every hour. Took eight doses; purging continued without abatement. Died on the fourth day.” Here follow the recoveries:—

First.—“Admitted in diarrhœa, followed by symptoms of collapse. Calomel three grains every ten minutes; but after twelve doses the calomel was discontinued, and the saline plan substituted. On the temperature of the body falling rapidly, the wet sheet was employed, and large quantities of brandy were given which the stomach alone retained. The purging continued at intervals, and the calomel was again given—three grains every fifteen minutes. After eight doses the dejections became bilious. The calomel was then given every hour, and, in six hours, febrile reaction commenced; the calomel was then discontinued. The patient passed through a severe consecutive fever, but ultimately recovered.”

Second.—“Admitted in the early stage. Brandy, ammonia, saline injections, without any mitigation of symptoms. Twenty-four hours after admission, symptoms of collapse came on. Three grains of calomel every fifteen minutes, and strong mercurial ointment in the inguinal region and axilla. The purging continued, but the evacuations showed the presence of bile. In twenty-six hours the vomiting ceased, the

pulse became perceptible, reaction was set up, the mercurials were discontinued, symptoms of improvement progressed, and at the end of twelve days the patient was convalescent."

Third.—"Twelve days after admission to the hospital under continued fever, symptoms of cholera appeared. Three grains of calomel every fifteen minutes: took ten doses; sinapisms to the body. Brandy and soda-water were given. Dejections became coloured with bile. In thirty-six hours the purging had ceased, and on the third day febrile reaction commenced. A minute quantity of blood was drawn, followed by dry cupping. The patient became slowly convalescent."

Fourth.—"Admitted with the usual symptoms of cholera. Saline treatment before mentioned. Calomel three grains every hour: after ten doses the vomiting and purging ceased, the last motion being of a dark, bilious hue; slight febrile reaction followed. During the next two days quickly became convalescent. At this time the epidemic was becoming milder."

Upon the foregoing cases, I need scarcely repeat the remark that the treatment of the four fatal cases is utterly different from that which I pursue; and the four which recovered resembled it in calomel having been given, but differed in the material point of the calomel not having been persevered in continuously until the symptoms of collapse were removed, and also in the exhibition of stimulants, which, with the limited use of the calomel, led on to the consecutive fever. In the second case of the recovered patients, mercurial inunction was employed, on the assumption that



the action of the mercury on the disease is by its absorption into the system—an opinion that endures an abiding refutation in the fact, that, give whatever quantity of calomel you may in the stage of collapse, no absorption of the medicine takes place, as is proved by no salivation resulting from it so long as its use is confined to that stage of the disease; for when continued into that of reaction, this particular effect is produced by it.

But to proceed. We now come to the details of seventy patients reported from the Pimlico Dispensary, who are represented in your report to have been treated by calomel *in doses small and frequently repeated*, and of whom thirty-one died and thirty-nine recovered. Of the condition of those patients when the treatment commenced, we are informed that

	Recovered.	Died.
15 were not in collapse when the treatment began	14 ...	1
14 were in slight collapse .....	12 ...	2
23 in marked but moderate collapse.....	11 ...	12
18 in extreme collapse .....	2 ...	16

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In 39 cases the calomel was given in 5 grains every half-hour.	
In 10 „ „ „ 5 „ 15 minutes.	
In 14 „ „ „ 20 „ half-hour.	
In 3 „ „ „ 5 „ hour.	
In 1 „ „ „ 10 „ half-hour.	
In 2 „ „ „ 5 „ 2 hours.	
In 1 „ „ „ 30 „ 3 hours.	

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Besides the above details, we learn from the report “that no mention is made of any obvious effect, immediate or remote. Of the thirty-nine recoveries, seventeen had consecutive fever; in fourteen of the worst cases a salt and water emetic was given; in

eleven venesection was used; in two the hot air bath; some took saline draughts containing chlorate of potash." These seventy form a part of the 365 cases which are especially brought forward as having undergone the treatment by calomel in small and frequently-repeated doses; and yet in the report quoted above it appears that to fourteen of the number twenty grains were given in a single dose every half-hour; and to thirty-nine only five grains in the same time; whilst it will be seen that only ten of the whole seventy were treated in conformity with the mode declared in the report to have been followed in all.

Had the gentleman engaged in the treatment of those patients responded to the request twice made to him, to afford some particulars as to the extent to which he had pushed the treatment by calomel in the several cases respectively, it would not have been left me now to affirm that no conclusion whatever can be grounded on data so vague and unexplained. Of the seventy cases asserted to be of cholera, fourteen were only in the premonitory stage, or that of urgent diarrhœa, for the treatment of which the five grains every half-hour were somewhat more than sufficient; whilst for the same number stated to have been in slight collapse, the dose of five grains every quarter of an hour would also avail. In the report, however, nothing is stated regarding the result of the treatment in which twenty grains were given to the fourteen patients every half-hour, or five grains every two hours, or thirty every three hours. There is also an entire absence of all infor-



mation as to the extent to which the calomel was carried in the several cases, and so that no knowledge can be gained whether or not the exhibition of five grains every fifteen minutes had failed; and if so, whether, as in other cases to which allusion had been made, the failure had not arisen from the medicine having been too early discontinued. The non-continuance of the small dose perseveringly would be as fatal to the hopes of success as the giving of twenty-grain doses at wide intervals would be; and that no limit need or should be set may be seen in the account sent in to your committee by Dr. Taylor, of Maghull, near Liverpool, who, in a letter with which he kindly favoured me, thus writes:—

“The calomel treatment, which was the one principally followed by myself and colleagues, was most successful. The dose usually given was two grains every five minutes, until the patient was decidedly improved. The greatest amount taken was by a female aged 24, who took 1,160 grains, with little appearance of salivation. A boy of 16 took 900 grains, without any appearance of salivation whatever. Both these patients got perfectly well. The remedy was given to patients of all ages. From five to twenty grains generally produced the desired effects. Children under the calomel treatment would come round in a few hours. Out of 147 cases, I had 126 recoveries and 21 deaths, or about a seventh part of the whole: this includes all ages and various states, from the slight to the complete collapse.”

I shall not quote farther from Mr. Taylor's report,



as I shall hereafter have to refer to it; but I would wish to invite attention to the particularity of detail observed in his account, as contrasted with that on which I have just animadverted, and to point out the important fact, that not only no limit need be placed on the quantity below what is required to subdue the collapse, but that patients under apparently the same condition in respect to the disease require a very different amount of calomel in the gross to subdue it, extending, as in the cases quoted from Mr. Taylor, to the enormous amount of 900 and 1160 grains of calomel; and from which we have to learn that a perseverance in its use in each case is necessary until the collapse is removed, and that from the neglect of this rule so many have experienced a failure in the limited and partial use they have made of it. It is affirmed by your committee that calomel is wholly inert in this disease, and to support this opinion an appeal is made to the large amount which can be taken in it; but such a notion can only be entertained by those whose knowledge of the disease has been acquired in the closet, or who have had but little experience in the treatment of it, and who therefore have not had the opportunity of watching the gradual progressing of a patient towards recovery, whilst under its steady use, and his backward change on its temporary suspension, and his onward progress and final attainment of recovery upon the treatment being resumed. All who have made trial of this treatment, and have steadily pursued it, will, I believe, vouch for the truth of these remarks.

Before I conclude this letter, I shall bring under your notice numerous examples where gentlemen with every indisposition to adopt this practice have realized, in the result, all they had been promised, and have tested its efficacy by a comparison with all that they had known before of the inefficacy of every other. If the patients, as affirmed by Dr. Gull, would have recovered without the calomel, then are we placed on the horns of this dilemma, that if the many under its use recover without its aid, then the excess of deaths under other modes of treatment must arise from the *nimum diligentie medici*: for when I come to that part of my subject in which I shall be able to show that more than eighty per cent. are recovered under the calomel treatment, and only thirty under other means, and with a conformity of result which no accident whatever could produce, then it may justly be inquired, whence arises the difference?

But to proceed. The first outbreak of cholera in this country, in 1832, was, I believe, at Tooting, in Surrey, and few persons can forget the ravages it committed there. Out of 187 children there were 108 deaths. Twenty-one of the children were between the ages of three and five, eighty-four between five and ten, and eighty-two from ten to fifteen. To these patients Dr. Gull has referred, and he informs us "that 141 of them were treated with calomel, (doses and frequency not given,) — stimulants, ammonia, and brandy, were occasionally administered; the deaths were 80, recoveries 61." In giving this account of the treatment by calomel at Tooting, and



the fatal results which attended it, there is left to be conjectured what was the dose, and what the time of its repetition; yet the whole question hinges upon these two fundamental points of the treatment—the dose and frequency of its administration, which should have been included in the account. This, however, has not been attended to in the report, and it is, therefore, in correction of this most material omission, that I must now furnish you with some details.

The regular medical attendant in the Tooting Pauper Asylum was Mr. Home Popham, who, in the number of *THE LANCET*, Feb. 10th, 1849, thus writes:—“*Dr. Ayre says, that for any benefit to be derived from calomel it must be given every five minutes. ....I did not experience the same success in its use as Dr. Ayre; though I can readily attribute its partial failure to having given the doses at too wide intervals, and I feel convinced, that had it been administered at shorter intervals, the success would have been much greater. I gave HALF A GRAIN OF CALOMEL EVERY HALF-HOUR, with one-sixth or one-fourth of a grain of opium, washing it down with a little brandy-and-water.*” I shall make no remark upon this ingenuous account by Mr. Popham, except to recommend to you the perusal of that gentleman’s entire letter, as calculated to afford the most important instruction as to what should and what should not be done in the treatment of this malady. In the cases which I have given from Dr. Shearman, as well as from many which I shall presently give, it will be seen with what facility the disease is subdued when occurring in children,

and how readily they bear the calomel ; and, I must also add, how rapid is their recovery, and how little more is needed for it than the calomel when properly administered.

The next series of cases to which we come, embraces eight patients admitted into St. George's Hospital. The details of their treatment, with which I have been favoured, are only very briefly given, and accompanied by a notice that no plan was followed—no limit prescribed. The doses and the intervals differed in every mode, and the adjuvants were very various. The eight patients are incorrectly stated in your report to have all undergone the same treatment by small and frequently-repeated doses of calomel. Five of these patients died, and three recovered. The following is the account sent me :—

1. “ Ten grains of calomel twice, and afterwards two grains every two hours. Died.”

2 “ Ten grains twice, and afterwards two grains every half-hour ; chloroform and camphor. Died.”

3. “ Previously astringents ; ten grains of calomel twice, two grains every ten minutes ; quantity taken not named ; chloroform and camphor. Died.”

4. “ Four grains every two hours, with salines and stimulants. Died.”

5. “ Twenty grains of calomel, astringents and morphia. Died.”

The following are the patients who recovered :—

1. “ Two grains of calomel every ten minutes, also with salines and stimulants. Recovered.”

2. “ Ten grains of calomel, followed by two grains every fifteen minutes, with stimulants. Recovery.”



3. "After an emetic, twenty grains of calomel, followed by three grains every five minutes; stimulants and warmth. Recovered."

By this last patient, as my correspondent informs me, "thirty-six grains of calomel were taken hourly in three-grain doses every five minutes, for upwards of twenty-four hours, and then continued until the third day at intervals of fifteen minutes. This patient was calculated to have taken three ounces (1440 grains) of calomel. Prolapsus ani, and tenesmus occurred as reaction commenced; but for the first two days the stools were in a condition of black wash, without producing the least effect. Salivation very slightly occurred from it."

On the above cases I need scarcely remark, that the treatment of the five fatal ones in no way resembled mine, and those which recovered only partially so, yet, nevertheless, in a sufficient degree to show the effect of the medicine when given in the small dose at short intervals. By the last case an instructive lesson is afforded from which to learn, that no fear of failure, nor any apprehension of mischief from the medicine, need deter us from a right onward prosecution of its use, so long as the stage of collapse continues.

At the side of the list of the twenty gentlemen whose names are given as having adopted the treatment with calomel in doses small and frequently repeated, Dr. Gull has given the result of thirty-seven patients treated in the Middlesex hospital, with calomel in variable doses at irregular intervals;



and after giving the deaths at twenty, and the recoveries at seventeen, he adds “ that he might include these results with those in the list,” and “ that the result thereby would not be much affected.” But the conclusion to which Dr. Gull would lead us, is based on the fatal error of believing that all the gentlemen forming his list had really followed an exclusive plan of treatment, instead of having employed, with a few happy exceptions, as variable a one as was pursued in the hospital he has quoted from. Indeed, if the average mortality of these patients had not been reduced in its amount by a deviation in some instances from the common mode of giving calomel, to the better one which I have employed, the result of the whole would have been still more unfavourable ; for six of those gentlemen, attending among them fifty-one patients, recovered no greater number than six, making an average of seven deaths out of every eight whom they attended. That such a result could attend a practice which so many had found to be most successful, was greatly above what I could credit, and it was, therefore, with no small measure of impatience that I sought for information on the subject from the parties. From one of these I learnt—that indeed I have already reported—that instead of two grains every ten minutes, he had given twenty grains in the same time ; and it is only at the moment I am now writing, that I have got a note from another of the six, and am informed by him, that he only gave two grains of calomel every half-hour, and only tried it with nine patients, of whom eight died. With the

calomel, opium and stimulants were given. Had the other practitioners responded to my request, accounts corresponding to those I have received would have been doubtless afforded. From the published opinions of one of those gentlemen, I infer that he never ventured upon any trial of the calomel which could lead to any successful result, because he holds that, to be successful, it must act through the system—an opinion shared in by the author of your report—and he looks for no beneficial effect from the calomel until the evidence of mercurialization is afforded, a condition which a moderate quantity of medicine, under ordinary states of the system, would produce, and, therefore, no one regarding this effect to be necessary, and attainable with a limited use of the calomel, would continue its employment to the great extent which is required to make it efficient.

But, to show how greatly Dr. Gull is at fault in asserting, that the average of recoveries under the various modes of treatment pursued, is equal in amount to that which occurs under the calomel in small doses, I have only to cite the evidence of witnesses whose testimony is given in his report, in reference to the results of the following list of medicines given singly or variously combined :—namely, opium in large doses, and calomel in large doses or in small ones at wide intervals ; salines into the stomach, or injected into the veins ; venesection ; ammonia ; chloroform, both taken and inhaled ; alcoholic stimulants, in large quantities ; emetics of various kinds ; turpentine ; sulphur ; acetate of lead, &c., &c. From



this report, I find the result of the above modes of treatment to have been most disastrous ; for out of 202 patients, many of them only in the premonitory diarrhœa when the treatment began, there were 139 deaths, and only 63 recoveries, instead of as the authorities presently to be cited, will prove that there might have been, only 43 deaths, with 160 recoveries. But this low per centage result of recoveries occurs as well under the use of calomel as under other modes of treatment, when that medicine is given in large doses, or in small ones at wide intervals, or if, when rightly given, it be too early discontinued. Of this fact an excellent illustration is afforded in the results of the treatment pursued with the 365 patients cited in your report, to all of whom calomel was given, but, as it is proved, to no more than 107 of them in accordance with the plan necessary to success. Of these 107 patients not less than 83 were recovered, whilst of the remaining 258 as many as 163 fell victims to the disease. In short, by one mode of treatment the recoveries were 80 per cent., whilst under the other the per centage was only 30, making a difference of 50 in the numbers saved in every 100 persons attacked.

But it is time that I part with this division of my subject, already, perhaps, unnecessarily extended. I shall, therefore, merely add, that from the correspondence which I have had with a fair proportion of the number whose names are given in your report, it is apparent that calomel has been given by them with no precise rule either as to the dose or the times of



its repetition ; that stimulants, both medicinal and alcoholic, with inordinate doses of opium, have been often freely administered ; while some acknowledge to me that their experience of the disease, and their opportunities for treating it, have been too partial to afford any just data upon which to form a conclusion. In fact, from all, or well nigh from all the gentlemen whose experience is related in your report, and who are represented as adverse to the treatment as pursued by me, I have received replies which prove, that in the trial which they made of the remedy, they were either uninformed of the treatment, or desirous to use it in a limited manner. Thus, for instance, in your report, it is stated by one gentleman, to use his own words, “ that in the cases treated on Dr. Ayre’s plan death eventually took place ;” and yet I learnt from him, in answer to my inquiry on the subject, “ that he gave only one grain of calomel every half-hour in the stage of collapse.” In another instance of the same kind of oversight in regard to the dose or the times of its repetition, it is stated in your report, by one of your correspondents, that he had to speak unfavourably of the treatment : and yet he informs me, in a letter, that his dose was only two grains every half-hour, and continued in some cases only until forty-four grains had been taken, and that it was combined with half a grain of opium with stimulants.

Before, however, dismissing the cases noticed in the report, there is a discrepancy between the account there given and that afforded in answer to my inquiries, which in justice to the subject I cannot pass

unnoticed. In your report, the following words are quoted from a correspondent:—"In my hands the calomel plan has succeeded in eight out of eleven cases of collapse, more or less severe. I considered three of those who recovered moribund when I first saw them." Upon this report Dr. Gull adds the following remarks:—"There is only a report given of one case, a female, who was under impending collapse when first seen. Two grains of calomel were given every ten minutes, and ether and chloroform to allay the cramps, but she never rallied, and died the same day." The following is the account sent me in a letter I have just received from the gentleman whose report, and the comment upon it, are just cited:—"I gave the calomel, in most instances, in doses of two grains, and in bad cases every ten minutes. In one case I gave more than 200 grains. This case I did not see until the patient had been twelve hours under treatment, and who was in a state of complete collapse. She was sixty-seven years of age. On the same day, I gave it in another case—a girl of nineteen—to the extent of 180 grains. She also was completely collapsed, and had been four hours under treatment. The adjuvants were simply external stimulants. Both cases recovered perfectly without salivation, the gums being just touched in either case. I gave calomel in much the same mode in the first epidemic, being at that time at Colchester; and so much was I then impressed with the plan, that I have adopted it ever since."

And now, gentlemen, having brought to a close the



observations which I desired to make on the manner in which your inquiry has been conducted, and the defective character of the evidence which has been adduced, I shall proceed to show that the very converse of the alleged conclusion is the true one, as can be proved by the testimony of a large number of medical practitioners, both of England and America, of unquestionable competency to form a right judgment, and who, knowing me only by name, could have no other motive for the employment and advocacy of calomel than that which truth and the welfare of their patients dictated. And here, let me remind you, that the question is not whether this or that medicine is the better remedy, but whether there be any remedy at all for this disease; for the witnesses cited in your report declare severally, and in no measured terms, the utter failure that attended the several modes of treatment which they employed. The question, therefore, I emphatically repeat it, is, whether there be any remedy for this terrible malady, and whether, at the present moment, with the disease amongst us, we can dismiss from our notice the subject of its cure. Sensible of its importance, and the great interests involved in its decision, I feel, as I have ever felt, that nothing should be left unsaid or undone by me, that can bring the treatment I advocate under the full notice of the profession, convinced as I am that no one who shall maturely consider the evidence of its efficiency, will reject, or, if he has tried it rightly, will ever desire to abandon the use of it.

In now proceeding to present you with testimony



in support of the practice I advocate, I find in passing down the list of the twenty medical practitioners given by Dr. Gull as having adopted the plan of treatment by doses of calomel, small and frequently-repeated, the name of a gentleman of Plymouth, (Mr. Eccles,) whose return of recoveries over the deaths is as 27 to 12, and who followed the above treatment. In a letter which that gentleman addressed to me he thus writes:—

“ My opinion of the calomel treatment is decidedly favourable. Out of about 250 cases of cholera, or diarrhœa that would, I firmly believe, have become cholera, I had only fourteen deaths, and at least one half of these were neglected cases ;—I almost invariably gave calomel in recent cases ; and with those not presenting symptoms of collapse, I began with three grains of calomel and one of opium, repeating it every two or four hours, or oftener as the symptoms and state of the patient seemed to indicate. If, however, collapse was present, or its near approach was apprehended, I gave calomel alone, often giving ten or fifteen grains in a dose, and then one or two-grain doses every ten minutes, quarter of an hour, or half an hour, as the case seemed to me to demand, watching the case many times in the day, and omitting the remedy as soon as a favourable effect was produced. On this treatment I alone relied for a cure.”

The second instance in the list is afforded by Mr. Merry, of Hemel Hempstead, whose recoveries exceeded the deaths by forty to twelve. This gentleman thus writes to me :— “ I commenced by giving the patient

when in a state of collapse, for an adult, one grain of calomel every ten minutes, continued in some cases, many hours, or as I perceived improvement, and have had the satisfaction in many cases which appeared perfectly hopeless, to see such an improvement as appeared to me impossible. During the years 1832, 1846, and 1853, it has fallen to my lot to see a great many cases of Asiatic cholera, and to have had the opportunity of trying *every plan suggested*; but, from my observation of facts, I feel satisfied that the only chance of success with the true Asiatic cholera is the calomel treatment."

The evidence I have now to cite will be of a more direct kind than that supplied by your report, yet scarcely more conclusive against the opinion expressed in it as to the value of calomel rightly administered in the collapse of cholera. The following letter is from Dr. Niddrie, and which I shall give *in extenso* as introductory to the quotations which are to succeed it:—

"It is melancholy," observes the writer, "that cholera continues to be treated by means which much experience has shown to be perfectly useless, and that even high authorities continue to recommend means that have not the least influence on this disease. I have notes of ninety-three cases which occurred in the year 1832, in the cholera hospital-ship *Dover*, thirty-three of which terminated fatally; and from those and many subsequent ones I have fully ascertained that brandy in any quantity, up to a bottle in twelve hours, does not at all



stimulate ; that ammonia is equally powerless ; and that opium, chalk, heat, friction, and bleeding are perfectly useless. So little effect had these and other remedies, that I feel assured they did not in the least retard the fatal termination of any of these thirty-three fatal cases, and in one case the fatal termination was certainly accelerated by the abstraction of a few ounces of blood. Calomel and soda-water given every three or four hours were equally useless.

“ Melancholy experience of the uselessness of such means, has led some to believe that treatment is of no avail in cholera, and that most cases would do quite as well if entirely left to themselves. This is doubtless the case in severe cases of collapse, if medicines be administered every three or four hours ; but what results from the treatment so zealously urged by Dr. Ayre ? In a former number of *THE LANCET* I gave details of one of the numerous cases that have convinced me that cholera, even in the stage of collapse, is quite as manageable as any other severe disease. The mode I followed differs little from that which Dr. Ayre so zealously recommends, and consists in placing on the tongue two grains of calomel, mixed with a little sugar, to be washed down by an effervescing draught. If rejected, the dose is immediately repeated ; and if not rejected, the dose is repeated every five or ten minutes till reaction commences, when the period between each dose is gradually extended to an hour or two. Calomel and carbonic acid gas (soda water) seem to be as powerless as other means unless thrown constantly into the



stomach ; therefore this mode of giving them must be followed, and, the course of the disease being so very rapid, the patient must not be left until the collapse yields to the constant attacks of these remedies. I have had ample experience of the total uselessness in cholera of large doses of medicines given at long intervals, and am fully convinced of the great value of calomel and carbonic acid constantly and perseveringly administered at short intervals. Under this treatment purging ceases, or becomes less frequent, although vomiting may occasionally recur for some time ; the expression of the countenance gradually changes ; the temperature of the breath and tongue rises ; the pulse gets stronger, and the skin warmer ; cramp becomes slight, and extreme collapse is followed by little or no febrile excitement, and the gums do not even swell, if care be taken gradually to discontinue the calomel by extending the period between each dose as the collapse disappears. I would earnestly urge this treatment on those who have found the usual remedies to fail, and am assured that, if this mode of administering calomel be strictly followed, the result will be found to be as happily successful as the usual large doses of the medicine at long intervals are found to be despondingly powerless."

The cases which I shall next take, also occurred in the epidemic of 1832 :—

Thus Mr. Hardcastle, of Newcastle, states :—  
 "Calomel has been our sheet anchor ; when administered according to your plan every ten or fifteen minutes, it has been eminently successful."

The Cholera Hospital attendants of Liverpool report that “In the stage of collapse, the most beneficial course has been the exhibition of calomel and opium in small, frequent, stimulating doses. We have tried every mode of treatment, from the saline remedies to the allowance of cold water *ad libitum*, and have been compelled to discard them in favour of the plan of which you have an outline.” (1832).

From documents communicated by the Central Board of Health, we learn that “the disease treated in the Cholera Hospital, Nutford-place, under the care of Dr. Arthur T. Holroyd, of Harley-place, has almost universally yielded to the treatment of Dr. Ayre of Hull. The house-surgeon, Mr. Toynbee, has been indefatigable in his attentions to the patients, ‘and I attribute,’ observes Dr. Holroyd, ‘my success in a great measure to his unwearied exertions. He suffered from a severe attack about two months ago, but fortunately recovered under the use of calomel and opium. One of the nurses, and a porter, who were also attacked, were restored to health by the same remedies.’ (Oct., 1833.)”

In the return of patients admitted into St. Pancras Hospital, we are informed that “In seven cases the saline treatment was employed, not only without mitigation of any one symptom, but with injurious effects. In not one case did the saline treatment produce a recovery; calomel and opium afterwards restoring the patients in some instances. One man (John Holloway) was most severely attacked on the 2nd of September. He was treated with calomel and



opium (muriate of morphia), of the former of which he took 800 grains, and of the latter thirty grains, without their producing any ptyalism or head affection. He recovered on the 14th of September."

Messrs. Wright and Wilson, Surgeons, Sheffield, thus write to me:—"We beg to transmit to you the result of our treatment of cholera, which plan of treatment was adopted from your system of giving small and frequently-repeated doses of calomel, and which you will find, on comparing the number of deaths with the recoveries, to have been successful and satisfactory to a high degree. (Total number of cases, 103; deaths, 23):—

Of those who reached the collapsed stage .....	54
Of those who had the disease clearly developed .....	28
Of those who had premonitory symptoms to a greater or less extent .....	} 21
	103

"Out of the twenty-three who died, we may remark, that in five the medicine was given with the greatest irregularity; that four had been on our sick-list many days previously, ill of other disorders—one, for instance, in typhus; that three were confirmed drunkards; and lastly, that one was nearly eighty years of age; therefore it will be seen that out of the twenty-three individuals in whom the disorder proved fatal, the medicine had only a fair chance of producing its effect in ten; in one case we gave the calomel to the extent of 300 grains."

"In a letter from J. Morley, Esq., Surgeon, of Blackburn, to the Editor of THE LANCET, that gentleman thus writes—"At the time of the appearance



of the disease in this town, in 1834, I was resident surgeon at the dispensary, and during its prevalence I directed, or rather personally conducted, the treatment of thirty-three cases. Of this number only three cases were saved, and these three, I have no hesitation in saying, were examples of the most malignant forms of the disease. It will be gratifying to you to know, and is a pleasure to me to inform you, that it was by Dr. Ayre's plan of treatment they were saved. I sat down by the bed-side of my patient, with my calomel and laudanum, administering them according to Dr. Ayre's suggestions,—and which, unfortunately, I had not been earlier acquainted with,—and never left the room until I considered the patient safe, and until reaction was satisfactorily established. I had frequently adopted the plans recommended by Mr. Orton, Mr. Kennedy, Drs. Russell and Barry, as well as those followed in several cholera hospitals in Leeds, Newcastle, &c., and with one uniform result. The result of these cases has given me a confidence in the plan of treatment recommended by Dr. Ayre which I do not at all feel in any other; and I believe it will be the conviction of all who fairly test the plan, that to him are due the warmest thanks of the profession and of the public."

Mr. Glenton, Superintendent of the Cholera Hospital, Newcastle, in 1832, thus writes—"Calomel has been given to a considerable extent in the doses you mention: and, as regards my own experience, it is a medicine deserving the highest praise."—May, 1832.

In the following letter, as in the other extracts already given, there are allusions to myself, in terms of commendation which I ought, earlier to have besought your indulgence to excuse; my name, however, is so necessarily introduced, in reference to the treatment, that it becomes an impracticable thing to omit it.

“ Having had,” says Dr. Bullar, of Southampton, “ an opportunity of closely watching the effects of small and frequently-repeated doses of calomel in malignant cholera, as recommended by Dr. Ayre, of Hull, I beg briefly to state the results, reserving the details for another occasion.” After observing that in persons of feeble constitution the type of the disease assumes a degree of intensity which no treatment can subdue, he goes on to remark, “ that with persons of the same class, and when the assault of the collapse was not sudden, the calomel was more effectual, and several of those recovered who would have died otherwise. In younger persons and in children, even when the treatment was not commenced until they were in a state of decided collapse, with all the characteristic symptoms of the malignant type of the disease, the calomel thus given was strikingly beneficial; not one of such patients died, although they were in the same state, in the same locality, and some in the same houses, in which others had sunk rapidly under different treatment. The dose given was one and sometimes two grains of calomel every ten minutes until the diarrhæa had ceased, the pulse had become perceptible, and some warmth of



surface. These observations refer exclusively to cases of malignant cholera of a very fatal type, all occurring in the same infected locality—all treated in the houses where they were attacked, and in the stage of commencing or decided collapse. They were cases such as I should have regarded as very hopeless before I tried Dr. Ayre's treatment, to which, I may add, I felt an *à priori* repugnance, and only resorted to at the first as the *anceps remedium melius quàm nullum*."

Mr. Cox, of Kensall-town, who has published a very able essay, entitled, "The Cholera, or what has it taught us?" with numerous illustrative cases, in a communication to THE LANCET, in 1849, expresses his desire to record the results of his experience in the treatment of Asiatic cholera, which had been pretty extensive as assistant medical officer to a large union district, and to lay before the profession the conclusion at which he had arrived, after giving a fair trial to a great number of vaunted remedies. This communication is followed by a second, giving the details of twenty-five cases of cholera in the collapsed stage, with the result of eighteen recoveries and six deaths under the calomel treatment. I regret that the space they would occupy does not allow of my transcribing them, as they illustrate the success of the treatment not more fully than the spirit and intelligence with which it was conducted.

Letter to THE LANCET, from Charles Monday, Esq., medical officer, West London Union.

"Sir, at a time when malignant disease is so prevalent, and medical opinions so conflicting, I feel



it a duty, holding a public appointment, and having opportunities of seeing more of the disease than practitioners in general, to record the result of the practice advocated by Dr. Ayre."

In the foregoing extracts from letters of various correspondents to *THE LANCET*, as well as in those now to follow, a general uniformity will be seen in the dose of the calomel, and in the times of its repetition, with only slight modifications in other points of the prescribed mode. In the manner, however, of giving the medicine, there is an exception which merits notice, —namely, in giving the drug in powders placed upon the tongue. The objection which I have felt to this practice, and which has always deterred me from pursuing it, has been, that in extreme collapse the tongue becomes cold, the faculties of the patient are in abeyance, and the action by which the powder has to pass into the stomach must be a voluntary one, and that, too, when the stomach is loathing everything but cold water. If given in the form of a minute pill, and passed at once into the throat from a dessert-spoonful of cold water, it is carried down by an involuntary action of the muscles of deglutition, and no will of the patient can resist them. I may add, that the thirst of the patient, and the desire for cold water, facilitate the giving of the medicine, and I remember no instance in which a patient was either unable or unwilling to take the medicine so administered. The calomel pill of two grains, made with gum, need not weigh more than two grains and a quarter.

In the following extract from a letter to THE LANCET it will be seen that the author, Mr. O'Shea, of Mount-street, Lambeth, advises earnestly against the practice of giving the calomel in powders, and for the reasons just given, and, after mentioning his failure in a case in which saline transfusion into the veins was employed; observes: "After this case, I was influenced by Dr. Crisp, to give Dr. Ayre's plan of treatment a fair trial, unpreceded by any other treatment; and the result was, that I did not lose a single patient out of many who have come under my care.....Do not administer the calomel so carelessly as to have the patient's tongue coated with white powder, as from so much chalk or carbonate of lead; recollect that in cholera the tongue and extremities first, and very quickly, show symptoms of departing vitality, as evidenced by their cold condition; give, therefore, pills, and not powders; do this early, and then, I think, you will have a considerable majority, whose fate you need not assume as almost certainly sealed. I conclude with a recommendation of a correct, careful, and early application of Dr. Ayre's two grain doses."

The following is an extract from a communication made to THE LANCET, by a gentleman (Mr. Jones, of Wandsworth-road) who had considerable experience in the disease: "The number of cases I prescribed for from July 6th to Oct. 6th, 1849, was 985. Of these, 107 were in intense collapse—7 deaths; 678 were water-purgings—no deaths; 200 trifling diarrhœa—no deaths. In the first two cases of intense



collapse, I ordered salines ; both dièd. Next two of intense collapse, one dièd. The next two, calomel alone ; both recovered. I continued ordering calomel in all other cases, and the result was as above stated. No opium. I have found calomel to be the sheet-anchor ; I have never tried stimulants."

In the following letter, Dr. G. B. Payne, of Warwick-square, observes—"I have much pleasure in bearing testimony to the success of the plan proposed by Dr. Ayre, of Hull, which I have steadily pursued, and have lost but one patient, a boy, throughout the whole epidemic, although I have had, under my care, very many cases under all stages of the complaint ; but one remarkable recovery induces me to send you a brief account of the case."

"After enumerating the symptoms, which were those which characterize the disease in its severe form he proceeds to say that he gave two grains of calomel every five minutes ; at the end of one hour the symptoms were much relieved, and the dose was reduced to one grain every half-hour. He then adds, " At three A.M., was called up and found the patient cold, livid, pulseless at the wrist, and the legs completely bent upon the body. Had so far improved up to twelve o'clock as to be able to sit up in bed, and was persuaded then to take a glass of brandy. The sickness and pain returned, and continued with increasing violence until the time I was called up. Although believing the case to be hopeless, so great was the prostration, I gave her ether, one drachm ; tincture of opium, ten minims ; with calomel, two



grains every five minutes, without anything else. This was done punctually for two hours ; and, at seven A.M., I had the satisfaction of finding my patient sleeping in a profuse perspiration. Reaction was completely established. The dose of the calomel was given every two hours throughout the day, and she recovered without any ill effects from the quantity of calomel taken."

The falling back into collapse in this case affords an instructive lesson as to the need of perseverance in the treatment, for it arose not so much from the brandy taken, as from a discontinuance, after an hour, of the calomel in the adequate dose and times of repetition,—an event of common occurrence with too many, who, failing to persevere in the use of the remedy, have been so constantly disappointed in its result. Dr. Payne very judiciously renewed the treatment, and succeeded in saving his patient.

The extract which I shall here give, from a letter of Mr. J. H. Nankivell, will afford a striking example of the value of attention on the part of the medical attendant to watch over the administration of the medicine, and to ensure the full effect of the treatment, which cannot be too strongly enforced, as making all the difference in the result between uniform success or uniform failure.

"When cholera first appeared," says this gentleman, "in this country, in 1832, I had an opportunity of seeing about forty cases in the practice of Mr. Cornish, at Falmouth, and he very soon found that calomel in small and frequently-repeated doses was

the only medicine which appeared to have any influence in controlling and arresting the disease. Indeed, so manifest was the advantage derived from the persistent administration of this drug, that he directed his assistants to remain with the patients as much as possible, and to give, every quarter of an hour, two or three grains of calomel; and thus relieving guard night and day they frequently had the high gratification of witnessing rapid recoveries."

In the extracts following from letters addressed to THE LANCET by Mr. Pritchett, of London, and by Dr. Serle, late of the Madras Establishment, a strong opinion is expressed of the value of calomel as a specific in this disease, an opinion which I shall hereafter advert to.

"As the medical world seems," observes Mr. Pritchett, "so much divided in opinion respecting the treatment of Asiatic cholera, and fully coinciding in the remarks made in last week's LANCET, respecting the treatment adopted by Dr. Ayre, of Hull, as evidenced in the diminished mortality in his practice, I think it my duty to send for publication an outline of two well marked cases successfully treated by his method. ....In a disease of so much intensity, where we have so deadly a foe to grapple with, I think practice far better than theory, and it appears to me that we have at command a safe and simple treatment, almost specific, that, were it generally adopted, would deprive the disease of nearly all its felt terrors."

"If any single remedy," remarks Dr. Serle, "merits the name of specific in the cure of disease, calomel is



the remedy in cholera, judiciously employed—that is, early employed, and in doses commensurate with the urgency of the symptoms,—a fact which is well attested by the experience of Dr. Ayre, of Hull, as recorded in *THE LANCET* of Saturday last, in which, of 219 cases, 176 recovered by the use of calomel.”

From a letter to *THE LANCET* by Dr. Norris, of the Troubridge Dispensary, I extract the observations, following:—

“ I have been so much pleased,” observes this gentleman, “ with Dr. Ayre’s treatment of cholera, and your remarks, that I beg leave to transmit a few observations on that disease, for you to annex (if you think them worthy of attention) to this paper. I trust and hope that Dr. Ayre’s plan of treatment will enable us to diminish the fatal effects of that direful disease, and I think he merits our warmest praise for the bold, yet judicious plan of giving small and frequently-repeated doses of mercury with opium, which in my humble judgment, is far preferable to giving scruple doses of calomel. ... ..In this awful disease, time is of the greatest consequence, and the quick repetition-doses of the remedy is the essential part of the discovery. We shall be justified in using it vigorously; for we must remember that violent diseases require violent remedies, and, as Shakespeare says, ‘ When the greater evil is fixed, the lesser is not felt.’ ”

The following particulars of a case, sent by Mr. Pickop, of Blackburn, to *THE LANCET*, affords a very precise example of the disease, and of the value



of perseverance in the treatment of it :—" I beg," says this gentleman, " to forward you the subjoined case, as proving the power and efficacy of calomel in subduing the cholera in its worst form, when administered as recommended by Dr. Ayre. My patient, a fine athletic young man, aged twenty-five, after a diarrhœa, which continued three days, was seized on the 1st of September with every symptom of Asiatic cholera. I visited him at half-past twelve P.M.; I found him in bed, complaining of severe pain in the bowels and legs, haggard expression of countenance, voice almost inaudible, pulse very feeble, cold livid condition of the skin, extreme thirst, with incessant purging and vomiting of the peculiar rice-water evacuations. Treatment—One grain of calomel every five minutes; simple effervescing draughts, with two drops of laudanum, every hour; toast and barley water *ad libitum*. Visited him every two hours until nine P.M., to ensure the steady exhibition of the calomel; but found little change until nine. He was then warmer, pulse very feeble, but improving, purging less severe, vomiting still urgent, voice better,—one grain every fifteen minutes. Sept. 2, Eight A.M.—Considerable improvement, pulse very quick, has dosed at intervals during the night; perfectly warm, restless, and very sick—one grain of calomel every hour. From this time he progressed rapidly towards recovery, and on the fifth day was able to leave his house—quantity of calomel, 140 grains. No ptyalism.

The next extract I shall give is from a letter by

Mr. Foote, of Tavistock-street, Covent-garden. He states, “ I have employed calomel in four cases, in three of which it was eminently advantageous. In two instances, which were very severe, relapses afterwards occurred, but the patients ultimately recovered. In the fourth case, that of an old lady in collapse, I have reason to believe that the calomel was not given according to my directions—that is to say, not every ten minutes.”

The following is from Mr. Spong, of Feversham, in Kent. After remarking upon the value of a union of authorities in support of truth, this gentleman observes — “ A correspondent, signing himself ‘ Dubitans,’ calls upon the adherents of Dr. Ayre’s treatment to come forward and give further experience respecting this practice. Since reporting in *THE LANCET* for August 4th, I have had two more unmistakable cases. They were treated on the same plan, and with the same success, one of them being so severe that the patient lay for some time speechless, pulseless, and gasping.”

In some observations made by Dr. Crisp, of Parliament-street, at the Medical Society of London, he states that he had tried Dr. Ayre’s plan of treatment in one case, and he could not give a better proof of his confidence in it than by saying that, if he were attacked by cholera, he would take two grains of calomel every ten minutes, with one or two drops of tincture of opium at intervals.

In a letter addressed to me in 1849, Dr. Carter, of Brighton, late of New Shoreham, thus writes :—“ I



have been called, altogether, to fifty-eight cases of cholera, or which would have become so but for the calomel; of these I lost *three* at the very beginning, wherein I did not employ calomel; and the only two deaths I have had since I adopted the calomel are recorded in the accompanying letter in the *Sussex Express*. I doubt whether any one of your correspondents can adduce more convincing proofs of the wonderful effects of your treatment. .... I have received two letters confirmatory of my success: one from my friend, Mr. Osborne, of Betterne, near Southampton, who acknowledges having been very much prejudiced against calomel until he tried it, after which every case recovered; the other I received yesterday from Mr. Wm. Stedman, near Guildford, who says, ‘I perfectly agree with your view of the disease, and I cannot imagine how it is that men will go on giving chalk, opium, and all that kind of thing, and by so doing check the very discharge that we want to promote,’ &c.”

The following is the account of the cases alluded to above, as sent by Dr. Carter for publication to the *Sussex paper*:—“William Adams, aged two years, was taken ill between five and six in the morning of September 9th, with violent vomiting and purging of the rice-water discharges. I first saw the patient at nine A.M., who was then speedily passing into the stage of collapse. To have one grain of calomel, with one drop of laudanum, every ten minutes. At eleven A.M. he was in a complete state of collapse; the child lay cold, clammy, blue, and pulseless; the

extremities felt like flagstones bedewed with moisture, and the face and chest partook of the death-like frigidity. Let the medicine be continued, made stronger, but not so much laudanum. At one P.M. the vomiting and purging had ceased, but the child, if possible, was colder than before. It lay an inanimate mass, with its eyes sunken in their orbits, and the limbs apparently sinking into the rigidity of death. Continued the medicines—persevered. At four P.M. there was a manifest improvment; warmth began to return to the surface. At six P.M. my little patient was convalescent. In two days the patient became quite well, and was soon able to walk out, and has never experienced the slightest inconvenience from the enormous quantity of medicine that was given. This patient, while under treatment, was visited by the Rev. M. Wheeler, vicar of the parish.

Whilst these pages have been passing through the press, a letter has appeared in *THE LANCET* journal on the subject of them, from Dr. Shearman, of Rotherham, to whose important testimony I have already had occasion to appeal.

After noticing with approbation the letter which is here reprinted from that journal, and the laborious report of the College, which he had carefully gone through, this gentleman thus proceeds—"I have found nothing satisfactorily proved by the Cholera Committee, as to the pathology of the disease, or its management when in collapse—excepting that it is not contagious—and finding the committee have equally condemned Dr. Ayre's mode of treatment of



cholera in *two-grain doses* of calomel every ten or fifteen minutes, with every other which had been tried, I consider it only fair towards Dr. Ayre that all practitioners who have really given his plan a fair, strict, and unprejudiced trial, should at once give the profession the benefit of their experience on so important a subject.

“ From the previous manner of its approach and progress, it is not improbable that we are on the eve of another outbreak. In 1832 and '33 I saw a great many cases of this terrible malady. At that time we were advised by the Central Board of Health, under the direction of Drs. Russell and Barry, to treat the cases with a hot air bath, *large* doses of calomel and opium, brandy, &c., &c. I have no hesitation in stating that many more persons would have recovered if the hot air bath had not been used, and cold water had been liberally allowed the wretched victims to drink. At that period every person who was attacked at the beginning of an outbreak of the epidemic died; as the verulence of the epidemic subsided, they began to recover in spite of the treatment. When we were visited by the disease in 1848-9, I had only two well-marked cases. These two I carefully treated on Dr. Ayre's plan, and they both recovered.

“ A fortnight since, I had another well-marked case, which I give briefly below. On the 30th of May last I was called to see Thomas S, a respectable, strong, healthy man, residing in Rising's-yard, College-road, Masbro'. I found he had been attended by a druggist in consequence of a diarrhœa for the

last three days, and he went to bed somewhat relieved. When I saw him at four o'clock A.M. he was perfectly cold, icy-cold tongue, extremities shrunken and blue, eyes sunk, features shrunken and livid, nails almost black, the peculiar choleraic voice (his natural voice being very loud and strong) most dreadful cramps in his arms, stomach, and legs, constant vomiting and purging a large quantity of fluid like dirty rice-water; had passed no water for twenty-four hours; had his perfect intellect. I did not think he would live many hours, he was so marbly cold, and so completely in collapse. I gave him five grains of calomel and three grains of opium to relieve his cramp, which failed. I then put him upon two grains of calomel every ten or fifteen minutes, allowing cold water. I visited him again at seven and nine A.M., and at two, five, and eight P.M., and at midnight; not the least improvement took place until eight, when slight reaction occurred. This was encouraged. *He had now taken eighty grains of calomel.* The purging ceased, but the vomiting continued, and violent hiccup attacked him. These symptoms continued unabated for the two following days; no urine being secreted for forty-eight hours after I saw him. I gave him the calomel much less frequently. He gradually improved, and on the 7th of June (nine days) was convalescent. The mercury has shown no specific effect. In the neighbourhood where this person lives are two open cesspools, and no proper drain. I had the sanitary condition of the place improved as much as possible, and, although before that time, almost every inhabitant



had been suffering from diarrhœa; no other case of real cholera has occurred.

“Dr. Ayre has now quoted so many respectable authorities in favour of his particular method of treatment, that, coupled with his own experience, it becomes necessary to ascertain if any other treatment has been as successful. In my opinion, not only the thanks of the profession, but of the public, are due to him for his valuable and unwearied exertions on such an important subject.”

In the foregoing history of this case there is much that merits attention. The first in order is the state of intense development of the collapse before the treatment began, and its unmitigated resistance to the remedy during the first sixteen hours of its employment; a resistance which nothing but the experience possessed by Dr. Shearman in its use, and his confidence in its power, could have constrained him to continue. By this gentleman's example a lesson is afforded of the necessity of an onward perseverance in the exhibition of the calomel; a lesson which I early learnt, and which I have already, on this and other occasions, endeavoured to enforce, having become aware that it was from a want of attention to this point that so many failed in their trial of the treatment.

In giving the next communications, it may be necessary to remark that, with the view of having authenticated the results of the treatment by calomel, in 1832, I applied to the Central Cholera Board to appoint one or more medical persons to visit all my

patients and report the results of the treatment. Having failed in this application at that time, as I did in a subsequent one in 1849, and having also failed in the same application to the local authorities here, I secured the attendance of three medical friends (Dr. Henesey and Messrs. Jenkins and Marston) who have recorded, as their deliberate opinion, “that calomel, given in small and frequent doses will, in every case, arrest the disorder in its premonitory stage, and will cure nearly all, if not all, the early cases of collapse, and a considerable proportion of those in whom the collapse is entire, and even in some cases when the pulse is not to be felt at the wrist.”

In confirmation of the opinions here expressed, Mr. Sharpe, who early adopted the practice, assures us that “Having seen a great deal of the cholera during its prevalence in 1832, and having attended a large number of patients both with Dr. Ayre and alone, and having pursued the practice adopted by him, I feel no difficulty in asserting that my experience of the efficacy of the treatment is in entire accordance with the opinion above expressed by the Messrs. Jenkins, Henesey, and Marston.”

To these authentications of the success of the treatment, I may add the evidence afforded by Mr. Hunt, who saw much of my practice in the Cholera Hospital, of which he was the medical attendant, and who wrote to me in 1849, to inquire if I had made any change in my plan of treatment, and added, “I am fully able to testify that it was more successful



than any other which I saw in Hull in 1832, and intend to follow it out as far as possible."

From the authorities cited from my professional brethren of the United Kingdom which form but a small portion of the many which I might have produced, I now turn to the American continent, whither the wide circulation of THE LANCET would convey a knowledge of my practice, and where I not less confidently trusted it would experience an unprejudiced trial. In this expectation I was not disappointed, and the extracts from the three following communications to THE LANCET will show you with what zeal and with what success, both in the United States and in British America, the treatment has been carried out. The first quotation is from Dr. Kelso, of White Oak Springs, Wisconsin, U.S., whose flattering commendation of me I should gladly withhold if it were not so necessarily a part of that which the writer designed to bestow on the treatment, and which the praise vouchsafed to its author was intended to strengthen :—

"In the 'faith' of reason and disinterestedness, I offer a willing homage to the merits of Dr. Ayre, of Hull, and his system of treatment in Asiatic cholera. Its advantages are—1st, simplicity and easy adaptation in practice; 2ndly, the uniform success that has followed its adoption in this portion of the north-western States of the American Union. In twenty cases of average severity occurring in my practice, this drug, singly or in combination with acetate of morphia, as the exigency of the case demanded,

proved a mine of almost unfailing success. That similar results followed the labours of many of my professional brethren who pursued this course in Iowa, Illinois, and Wisconsin, is undoubted; and I take pleasure, indeed, in recording the fact that more than three-fourths of the active practitioners in those States, and indeed of the Union, followed the system of Dr. Ayre, or a practice very closely allied to it, with very general success."

The following is a letter from Dr. Gibb, published in *THE LANCET*, and dated from Montreal, where that gentleman then resided, but who is now settled in the metropolis :—

"In the month of February, 1848, on leaving the shores of England for Canada, I determined, after an attentive perusal of the papers of Dr. Ayre, of Hull, published in the second volume of *THE LANCET* for 1848, to adopt the plan of treatment in cholera which had proved so eminently successful in his hands—namely, that of small and repeated doses of calomel. Since that time, opportunities have been afforded me in this city (Montreal) for testing its efficacy, and it has proved so far useful in my hands, that out of ten cases I have not lost a single one. My cases, to be sure, have been few, but their successful issue encourages me in the belief, that if I had had many more, nearly all might have been similarly saved. Dr. Hall, the editor of *THE BRITISH AMERICAN MEDICAL JOURNAL*, in a paper on the calomel treatment in the Asiatic cholera, published in the August number of that periodical, has reported ten



cases of recovery in his practice, all treated by calomel and camphor, and only two proving fatal. One of the deaths was from exhaustion, in an old yeoman, aged seventy, who had completely recovered from the stage of collapse under the influence of the medicine; the other was the only case amongst the ten in which recovery did not take place from that stage. In another paper on cholera, in the December number, by Dr. Von Iffland, of Quebec, that gentleman states that out of fifty cases he only lost five, and his treatment in all was that employed by Dr. Ayre, of Hull, by small and repeated doses of calomel. .... I have never regarded the quantity of calomel taken as of any moment in such a dreadful disease, trusting to combat its ill effects by proper treatment after subduing the cholera. .... I was witness to the two first cases which occurred in this city: the first, a severe and well-marked case, in a female aged forty-three, was treated on Mr. Bell's plan, with quinine and iron; and certainly the vomiting and purging were quickly stopped, but only to return again with renewed violence. This patient expired in thirty-six hours. The second, in the same house, and of a much more severe form, in a man aged fifty-five, was treated, at my suggestion, on Dr. Ayre's plan; and although the vomiting and purging, with dreadful cramps, did not yield for some time, under a steady and persevering administration of the calomel in small doses, and of the laudanum, the man regularly recovered. The fourth case in the order of my patients was that of a man in *articulo mortis*, but

which gave me a good chance of testing Dr. Ayre's treatment; and, after a sudden and powerful reaction by plunging the feet in hot water, I poured in the small doses of calomel, with the gratifying effect of subduing the stage of collapse, and restoring my patient to health; and I most freely coincide with Dr. Ayre and Dr. Crisp in the opinion that we ought not to despair if we are called to patients in a moribund state, for there is still a chance of saving life. It affords me peculiar pleasure in having this opportunity of recording the success attending Dr. Ayre's treatment; and so fully convinced am I of its efficacy and utility, that if I were ever to be attacked with cholera myself, I should wish to be treated on its principles."

In the letter given above, from Dr. Gibb, an allusion is made to Dr. Hall, of that city, and to his success with the calomel treatment; and in the journal containing the details of his cases, I extract the following summary of his opinions on the remedial value of calomel in the treatment of this disease.—"If," observes Dr. Hall, "the system is not at once paralysed, the fairest prospect is afforded to us, through calomel, of rescuing the patient from an otherwise imminent death. The calomel treatment has, then, something more than a mere claim on us, on the grounds of theory. Its practical employment has proved as signally successful in the hands of other medical gentlemen of this city, as it has done in mine."

And now, gentlemen, I bring to a close these



extracts, and in doing so, I must recal your attention to the great discrepancy between the character of the evidence cited in your report and that which is here supplied. The authorities quoted by Dr. Gull are brought forward as vouching for the absolute inefficiency of calomel as a remedy in cholera, even when given, as it was mistakingly assumed by Dr. Gull to have been, in doses small and frequently repeated ; whilst those cited above by me are found to have given the medicine in strict accordance with the prescribed mode, and to have been eminently successful in its use. The great failure, therefore, of the former, and the great success of the latter, are solely attributable to the neglect of the one, and the strict adherence of the other to the rule enjoined, of giving the medicine in doses small and repeated at brief intervals, and on the straight onward continuance of it so long as the collapse endured. Many of those gentlemen, whose unbiased testimony I have quoted, employed no inconsiderable pains to impress upon their readers the importance of an observance of these conditions as essential to success ; yet not one of these gentlemen's names is to be found in your report, although the author of it has assured us that he had employed "an unlimited amount of time and labour in examining the journals of this and other countries." And, indeed, from anything that can be gathered from your report, it might be inferred that the practice of giving calomel in cholera was one which I had recommended others to employ without having had the opportunity of trying it myself, for in

no instance is there cited a single case in which I had used it, and by which my success in the treatment might be tested. I need scarcely, however, say that my trial of the calomel, in 1832, was made on more than two hundred patients in Hull, whose cases I have detailed in a work on the subject, and a copy of which I sent to the author of your report; informing him that I had made every effort to verify the results of the treatment by engaging professional friends to witness them with me.\*

Dr. Gull assures us that the pathology of the disease is unknown, and, therefore, that the use of calomel for its cure is empirical. It may be so, for I have no predilection for any theory on the subject; but it was with a suspicion that the common English cholera is but a type of the Asiatic form, and from my having through many years regarded the milder disease to arise from an interruption of the secretion of the liver, and successfully employed calomel for its cure, that I was led to apply the same principles of practice to the cure of the malignant form of the disease, and to visit Sunderland for that purpose. A patient in a state of collapse, whom the late Dr. Clanny kindly consigned to my care, was the first who underwent that practice, and was saved by it. This patient was bled immediately before coming under my treatment, and was the first, as Dr. Clanny

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\* In making in the foregoing pages such constant reference to Dr. Gull, as the author of your report, it may be proper, in the way of explanation, to state that, in answer to an enquiry on the subject, I became officially informed that this gentleman was not merely the writer of the committee's report, but was himself *the committee* on the subject of the treatment, and was alone responsible for all that is contained in it.



assured me, who had been saved after reaching the stage of collapse,—a fact confirmed to me by the communication from Dr. Brown, also of Sunderland, printed in your report, in which that gentleman observes, “ I employed bleeding, eighteen years ago, because I was then inexperienced in the disease, and the practice came recommended from India ; but I soon abandoned it from finding its effects invariably pernicious.” The practice which I began in Sunderland, I renewed in Hull, and the first case that occurred in this town, was so treated by the late Dr. Chalmers, and was saved. I visited it with him, and recognised in it all the characteristic symptoms of entire collapse. On the following day, three other cases occurred, which came under the care of others of the profession, whose practice was in accordance with the methods then in vogue, and answerable to some of the many theories at that time so prevalent. As soon as I had verified the success of my own use of calomel, I made the fact known through the pages of *THE LANCET*, in 1832, as I did subsequently in 1849, and to these latter communications on the subject, I added a tabular view of fifty patients with the particulars of their condition, treatment, duration of the disease, and results, with the names of the several gentlemen who saw them with me.\*

These then were the materials with which I desired to furnish your committee of enquiry ; and it was under a full conviction of the value of such testimony, and of the obligation I was under to my subject to

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\* See the last page.

adduce it, that I then procured, and now give extracts from, a copy of the register kept in this town, in 1832, by the inspector of the Local Cholera Board, in which are shown, in a tabular form, the name, age, residence, and date of attack of every patient, with the name of the medical attendants respectively, and the results of their treatment. From this table, now before me, I have extracted the entire number of patients treated by nine medical attendants of this town, with the results of their treatment. Three of these employed calomel in doses small and frequently-repeated, whilst the others followed the various modes of treatment used in other parts of the country, and with the same low average amount of success.

Patients treated by the six medical attendants—

	No. of Patients.	Recovered.	Died.
A .....	36	13	23
B .....	51	23	28
C .....	28	13	15
D .....	34	18	16
E .....	35	13	22
F .....	50	16	34
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Patients...	234	Recovered...96	Died...138

The following are the numbers and results of the treatment by three medical attendants employing the calomel treatment—

	Patients.	Recovered.	Died.
Dr. Chalmers.....	24	20	4
Mr. Sharpe.....	103	69	34
Dr. Ayre and Mr. } Sharpe .....	43	36	7
Dr. Ayre.....	175	140	35
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Patients...	345	Recovered...265	80



Among the 218 patients whom I attended, there was present the characteristic discharges and cramps, but there was a considerable difference in the intensity of the symptoms, and I believe one-fourth of the whole would have recovered with no other aid than cold water, a fact which all must have observed in their practice, and which accounts for the recovery of some patients under every mode of treatment; and, also, explains the reason why so many, finding their treatment available in the milder cases, and useless in the severer ones, have adopted the opinion that no remedy can avail in the stage of entire or extreme collapse. Of the 43 patients whom I lost, and whom I reported to the Cholera Board, as having been seen by me, 13 were unable to take any medicine, and some of them had expired before I saw them; whilst others were negligently nursed, or subjected to other extraneous agencies which tended to preclude recovery. It was, indeed, a rule with me to make a note of such causes, and I have elsewhere described them; for my experience of the power of calomel to subdue the collapsed stage even in its pulseless form, had imposed upon me the obligation to explain to myself not merely *how* I cured *some*, but *why* I did not cure *all*; for the same medicine that cures twenty patients in extreme collapse should be equal to the curing of twice that number if not prevented by some recognised and avoidable cause.

Notwithstanding the large quantity of calomel which was required to subdue the disease, amounting in one instance, with an hospital-patient who recovered, to

580 grains, there were not more than six or eight of the whole number recovered who had any soreness of the gums or other signs of salivation, or who had any consecutive fever. Four days was the average duration of the disease, though the stage of collapse usually yielded in less than half that time; and if children recovered more rapidly than adults, no age precluded recovery if the patients were exempt from disease. One of my patients was only of the age of six months, whilst another had attained the age of 92 years. Both were in extreme collapse, and both recovered, and the latter survived her attack to the age of 103, and with almost uninterrupted health. In prosecuting the treatment, I had every motive to leave nothing unemployed which an earnest attention and personal labour, could effect. To obviate delay I carried calomel pills with me; and the better to know the times for giving them, where there was neither watch nor clock, I had the nurses supplied with a very small sand glass; and to encourage them to assiduity in their somewhat laborious duties I engaged to reward them with a gratuity if their attentions resulted in recovery.

But it is time to bring these somewhat desultory observations to a close; and I shall, therefore, only further remark that, apart from all considerations regarding the pathology of the disease, we have the same sanction for the use of a specific for its cure, as we have for that of quinine in intermittents,—of whose nature we know nothing, nor of the mode by which the quinine relieves them. It was to an accident that



we became indebted for our knowledge of its remedial power, and the good sense of mankind has since lent its aid to sanction the use of it. As our knowledge advances, the mystery may hereafter be revealed which now conceals the nature of those diseases, and the mode by which they are relieved. Were this the fitting occasion for it, I might hazard the conjecture, in regard to cholera, that it is by the action of the calomel on the stomach and first passages, that its remedial power is exerted, and this either immediately upon them, or intermediately upon other organs whose functions are associated with theirs, as of the liver, whose restored secretion is coincident with the removal of the collapse. But whether this or any other notion of the *rationalè* of the treatment by calomel be the true one, is a point of no practical value when considered in relation to the all important question here at issue, namely, whether calomel be a remedy for cholera in its stage of collapse. It may be humiliating to our philosophy to make the confession, that we know nothing more of the operation of calomel upon the disease, than that which we derive from the success which attends its use ; but this, and no more than this, is all that is known of the remedial action of *quinine* in the cure of intermittents. Analogy, therefore, gives to us the warrant for believing that as for an intermittent, so likewise for cholera, a specific remedy may exist ; and that it does exist, and that calomel, when given in doses small and frequently and continuously-repeated is that specific, is an opinion

shared in by many with me, and which I have long entertained, and not inconsiderately adopted.

It is, in truth, only on the principle here assigned to calomel that we can account for the extraordinary fact—attested now by so many—of a person, who at this hour is prostrated to a pulseless condition of weakness, with the skin livid, and of a marble coldness, extending even to the tongue and breath, and with the eyes deeply sunk in their sockets, and the features shrunk to the extreme of ghastliness, shall, in a few hours hereafter, be not merely rescued from an otherwise inevitable death, but be restored in that brief time to a state of comparative convalescence ; and this by a medicine, whose operation is alike unseen and unfelt, and only to be recognised by the happy results which attend it. That the specific remedial power, therefore, here asserted, is justly due to it, is a conclusion which I cannot resist ; and, however the general employment of this medicine may be delayed, I am willing to assure myself, that the hour is fast hastening on, when this my long-cherished hope will be realised ; and the malady, hitherto so appalling, shall be stript of more than half its terrors.

I have the honor to subscribe myself,

Gentlemen,

Your obedient servant,

HULL, June, 1854.

JOSEPH AYRE, M.D.



POSTSCRIPT.—*As illustrative of the disease itself, and of various points of interest treated of in the foregoing pages, I here give the details of the following cases of the cholera in its stage of extreme collapse, as they occurred in my practice in 1832; selecting them purposely from the list of patients whose ages varied from the early one of six months to the advanced period of ninety-two years, in order thereby to show that neither the weakness of infancy, nor that of extreme old age precludes recovery from this disease, or renders the treatment of it more difficult:—*

CASE I. Mary Altas, aged six months; October 19th. Is lying in a state of apparent torpor; purging and vomiting profusely a colourless fluid; skin cold and livid; no pulse at the wrist; the eyes sunk. The mother, it is said, died a week since of the disease. *To have a grain of calomel every seven minutes until relieved, with occasionally one drop of laudanum in water.*

20th. The medicine has been given very irregularly, and the skin is still cold and livid, and the purging and vomiting continue. The pulse is perceptible, but feeble. *To have the calomel regularly until relieved.*

21st. The surface is now warm, but the child is restless. *Two leeches to be applied to the body and a cold lotion to the head, and some castor oil to be given.*

22nd. The sickness and other symptoms relieved; appears much better.

23rd. Is quite well—was visited by the hospital assistants.

CASE II. John Anderson, aged eighteen months; June 2nd, 12 at noon. The child is lying by the side of its mother, who is ill of another complaint; is vomiting and purging copiously a colourless fluid; is quite cold and livid, and no pulse is perceptible; has great thirst; has been sick during

several hours, and lately became cold and livid *To have a grain of calomel and half a drop of laudanum every ten minutes.*

3 P.M. Has had no medicines, as none of the relations or neighbours dare enter the room. Is frightfully cold and livid. To have a nurse from the hospital.

5 P.M. The child has taken the calomel regularly, and is less cold, and the sickness and purging are abated.

6 P.M. Is worse ; no medicine has been given during the last hour ; has been sick once ; the limbs are cold and blue and damp ; a gratuity is promised to the nurse if the child be saved. *The calomel to be taken every ten minutes as before ; and after four hours at wider intervals.*

3rd, 7 A.M. The child has taken eighteen doses of its medicine, and is in every respect greatly improved ; has had no stool. *To have castor oil and its medicine every two hours.*

6 P.M. Is cross, and the skin is preternaturally warm ; has had a stool. *Two leeches to the body ; the calomel to be discontinued.*

4th. Is greatly improved, and has slept in the night.

5th and 6th. Continues to improve.

7th. Is quite well. No soreness of the gums.

CASE III. Hannah Mason, aged 2 years ; October 11th. Is purging and vomiting a whey-like fluid ; skin very cold and livid ; eyes sunk ; voice somewhat hoarse ; thirst, &c. ; has been affected some hours. *Half a grain of calomel every five minutes, with half a drop of laudanum, until the skin becomes warm.*

12th. Is quite relieved ; purging and vomiting have ceased ; skin natural ; no thirst ; to have castor oil ; was seen by the hospital attendants ; on the following day the child was well ; no ptyalism.

CASE IV. Ann Souter, aged 7 years ; May 3rd, 11 A.M. Is purging and vomiting the characteristic fluids ; Is of a death-like coldness ; lips and hands livid ; no pulse at the wrist ; eyes much sunk ; has cramps and much thirst ; was seized



this morning with the above symptoms ; - Mr. Sharpe and his assistant (Mr. Cooper) are present, and have been giving her a grain and-a-half of calomel with one drop of laudanum every five minutes ; nothing else has been given ; waited an hour with Mr. Sharpe.

12 at noon. Has taken 12 doses of the medicines ; pulse is now perceptible, and the surface is somewhat less cold and livid ; had no sickness until near the end of the hour, when she threw up a large quantity of fluid with the characteristic violence ; had also some cramps. *To take a grain of calomel every twenty minutes.*

2 P.M. Mr. Sharpe is present ; the patient is asleep ; skin of natural warmth ; breathing calm, and pulse quite distinct. *To take the calomel every half-hour, and without the opiate.*

9 P.M. All the unfavourable symptoms gone ; pulse 100 ; skin natural ; no sickness ; not much thirst ; pulse quite distinct ; has slept a good deal. *Calomel every two hours.*

4th, 7 A.M. Has had a good night ; skin and pulse natural ; has had a stool, which was very dark. *Calomel to be discontinued.*

5th. Has had a good night ; wants to be dressed.

6th. Is quite well, and has been walking in the street ; has no soreness of the gums.

CASE V. John Skelton, aged 11 ; Oct. 16th. Seen by the hospital assistants. 9 A.M. Is purging and vomiting profusely a whey-like fluid ; skin quite cold and somewhat livid ; eyes sunk, and features contracted, and the expression anxious ; tongue white ; pulse scarcely perceptible ; great thirst ; urine suppressed since last night. Was yesterday attacked with diarrhœa, and at six this morning with the vomiting and purging of the present whey-like fluid. *To have one grain of calomel with one drop of laudanum every five minutes. After an hour the laudanum only with every alternate Pill.*

12 at Noon. Has taken his pills regularly. The purging continues, but has not been sick lately ; skin less cold ; pulse very feeble. *To continue the pills.*

8 P.M. Skin of a natural temperature. Has greatly improved in all his symptoms. *A pill every half hour, but to be discontinued after four hours if he remains better.*

17th. 7 A.M. Has passed a pretty good night; pulse natural; tongue clean; no thirst; has passed water after thirty-six hours suppression; bowels open, motions black.

18th. Is quite convalescent. No ptyalism.

CASE VI. Susanna Curry, aged 18. Admitted into the hospital in a state of extreme collapse. *A grain of calomel every five minutes.* Was nearly convalescent after taking 150 grains, when the patient's mother, admitted to see her, gave her an orange, and renewed the disease to nearly all its former violence. She was in a state of collapse, with the surface livid and cold for three days, and was not convalescent until 300 grains had been taken. Left the hospital recovered in ten days.

CASE VII. Mary Reed, aged 18; admitted to the hospital at the same time as the above and in the same intense state of collapse. *Took upwards of 200 grains of calomel, and left recovered in eight days.*

CASE VIII. John Vaughan, aged 32, a tramp of drunken habits; admitted into the hospital August 14th. 11 P.M. Is affected with the usual characteristic discharges; skin cold and livid; pulse not perceptible at the wrist of the right arm; has had a diarrhoea two days. *To have a grain of calomel with a drop of laudanum every five minutes.*

15th. 10 A.M. Has been closely attended through the night by Mr. Hunt; has taken seventy pills. The pulse is now quite distinguishable; the skin is still cold and livid; the eyes much sunk; the voice very hoarse; the vomiting and purging as before. *To continue the pills.*

2 P.M. Has not been so well during the last hour; purging and vomiting still continue, and the skin is still cold and livid, but without any dampness; countenance and voice still the



same. *To take two grains of calomel every five minutes for an hour, and afterwards one as before. To have an enema of broth and a teaspoon full of brandy occasionally.*

5 P.M. Is better; purging stopped; sick only once. *Continued the pills, omitting the laudanum.*

9 P.M. The skin is improved in its temperature, but is still cold and livid; the eyes are also still sunk, and the voice hoarse; some sickness. *The Pills to be continued as before every five minutes.*

16th. 7 A.M. Has had a good deal of sleep; the voice still choleraic; pulse feeble; skin less cold and livid; purging still characteristic; has taken his pills regularly when awake; has taken some beef tea. *To have an enema of broth. Continue the pills.*

7 P.M. The countenance somewhat better, but the skin is still cold. *Continue the Pills.*

17th, 7 A.M. Has passed a good night, and is considerably better; stools of an ash colour; passed water for the first time for seventy-two hours; skin of a natural warmth; countenance and voice greatly improved; pulse calm. *Discontinue the pills; to have an enema of broth, and effervescing powders.*

18th. Has passed a good night, and declares himself to be quite well.

From this time during the next two days continued to improve, and on the 21st left the hospital quite well and without any soreness of the mouth, although he had taken the large quantity of five hundred and eighty grains of calomel between the evening of the 14th and the morning of the 17th.

CASE IX. William Dimond, aged 68 years, a blind man, was seen by Mr. Jenkins and Dr. Henesey. In extreme collapse; was pulseless for some time; took one grain of calomel every five minutes for twenty-four hours; was very attentively nursed by his wife; and was dressed and walking about down-stairs on the third day; had no ptyalism.

CASE X. Mary Gambling, aged 92 years, seen by the hospital assistant, Aug. 16th. 2 P.M. Is purging and vomiting a whey-like fluid in very profuse quantities ; skin very cold and slightly livid ; the eyes sunk, and features contracted ; great thirst ; much oppression at the chest ; voice hoarse ; cramps of the feet and ankles ; pulse very feeble ; urine suppressed ; has been affected with diarrhœa during the last ten days, and was seized this morning with dizziness and staggering ; shortly afterwards became sick. *To have one grain of calomel every five minutes for an hour, and afterwards every ten minutes.*

7 P.M. Has taken her pills regularly ; skin less cold ; no cramps ; pulse firmer ; thirst less ; the purging and vomiting continued, but the quantity discharged is lessened. *To take a pill every twenty minutes.*

17th, 8 A.M. Has taken only twenty pills during the night ; still some sickness and thirst, though both greatly lessened ; purging abated and the motions are dark ; skin of nearly a natural temperature ; countenance and pulse much improved ; voice natural ; urine still suppressed. *To take a pill every hour, with one or two doses of the cretaceous mixture.*

18th. Urine still suppressed ; in other respects is much better ; has still some sickness and purging, but the discharge is no longer whey-like. *Discontinue the pills ; to have boiled rice and some gruel with wine.*

19th. Has continued to improve, and has passed a good night ; no sickness ; tongue clean ; bowels only once moved ; motions dark ; has passed some urine after *seventy* hours suppression.

20th. Has continued to improve, and is sitting up in bed, smoking a pipe, and declares herself to be “quite hearty.”

24th. Is down-stairs quite well, and sitting at tea with her daughter ; and has walked out into the yard ; no ptyalism ; This patient lived to the age of 103.



A TABULAR VIEW of Fifty Cases of Cholera in the Stage of Collapse; containing a Statement of the Quantity of Calomel given in Single-Grain doses, to each Patient, and the Day on which entire Recovery took place.—Average quantity of Calomel to each Patient, 128 grains.—Average duration of disease, four days.

\*\* Those marked with a \* had a slight soreness of the mouth.

No.	Name.	Age.	Degree of Intensity.	Quantity of Calomel taken.	Duration of Disease.	By whom seen.
				Grs.	Days.	
*1	Thornton.	42	Pulseless	130	Three.	Dr. Clanny.
2	Lotherington	22	Ditto.	134	Three.	Mr. Sharpe.
3	Souter.	7	Ditto.	36	Three.	Ditto.
4	Anderson.	1 $\frac{1}{2}$	Ditto.	27	Four.	Hospital Assistants.
5	Vaughan.	32	Ditto.	580	Six.	Hospital.
6	Elliott.	14	Extreme collapse.	62	Four.	Hospital Assistant.
7	Gambling.	92	Ditto.	80	Four.	Mr. Sharpe. This patient lived to the age of 103.
8	Millington.	9	Pulseless	151	Nine.	Hospital Assistant.
9	Paver.	42	Medium	62	Two.	Ditto.
10	Pullan.	38	Ditto.	88	Three.	Ditto.
11	Carter.	11	Extreme.	120	Four.	Ditto.
12	Fell.	10	Ditto.	100	Two.	Ditto.
13	Curry.	18	Extreme.	300	Ten.	Hospital.
14	Reed.	18	Ditto.	200	Eight.	Ditto.
15	Evans.	25	Ditto.	200	Twelve	Ditto.
16	Barnsly.	20	Ditto.	150	Five.	Urine suppressed 76 hours.
*17	Thompson.	30	Ditto.	200	Eight.	Hospital Assistant.
18	Harland.	3	Ditto.	150	Three.	
19	Taylor.	5	Pulseless	170	Five.	
20	Thompson.	72	Ditto.	200	Four.	Hospital.
21	Dimond	98	Ditto.	220	Three.	Mr. Sharpe.
22	Thompson.	24	Extreme	100	Three.	Ditto.
23	Forbes.	10	Ditto.	120	Four.	Hospital. In collapse two days, while at home, from irregularity in taking his pills.
24	Chapman.	16	Pulseless	160	Four.	
25	Mortimer.	10	Extreme.	100	Three.	Mr. Sharpe.
*26	Hobson.	63	Ditto.	200	Five.	Slight ptyalism.
27	Walkinson.	36	Ditto.	250	Five.	
28	Blackburne.	63	Ditto.	300	Five.	
*29	The Wife.	64	Ditto.	180	Five.	Slight ptyalism.
30	Brown.	30	Ditto.	260	Four.	Attended chiefly by Mr. Sharpe.
31	Larkin.	34	Extreme.	180	Six.	
32	The Daughter.	12	Ditto.	130	Four.	
33	Smith.	24	Ditto.	200	Six.	Was enciente, and went her full time.
34	Bent.	30	Severe.	60	Three.	
35	Sargesis.	40	Ditto.	50	Three.	Seen first by Mr. Sharpe. This patient, and all those following, were seen in company with Dr. Henesy and Messrs. Marston and Jenkins, and by the Cholera Hospital Assistants.
36	Melling.	14	Extreme.	180	Four.	
37	Johnson.	34	Ditto.	90	Two.	
38	Skeller.	11	Ditto.	110	Three.	
39	Hardy.	1	Ditto.	15	Two.	
40	Holdstock.	1 $\frac{1}{2}$	Medium.	12	Three.	
41	Cockrell	40	Extreme.	214	Six.	
42	Atlas.	1 $\frac{1}{2}$	Pulseless	30	Four.	
43	Wright.	30	Extreme.	80	Two.	
44	Martin.	19	Slight.	8	Four.	
45	Mason.	2	Extreme	30	Two.	
46	Gornell.	5	Ditto.	63	Three.	
47	Hutchinson.	24	Medium.	15	Two.	
48	Cuthbert.	1	Ditto.	15	Two.	
49	Tweddle.	14	Extreme.	48	Four.	
50	Bullers.	6	Ditto.	30	Two.	

From the cases, whose details are given above, a lesson may be derived of the value of time in the treatment of this disease. Where the commencement of the treatment is greatly protracted, or the course of it much interrupted, or too early suspended, a certain degree of fever will succeed the stage of collapse, and prevent or protract the recovery. Fever, however, is not essentially a part of cholera; nor does it necessarily succeed its stage of collapse, which is, in fact, THE DISEASE; and it may be prevented, as the cases above will show, by an assiduous and right treatment of that stage. There will, of necessity, be cases of the disease where, from delay in giving assistance, the powers of the system become paralysed, and the patient actually moribund when visited; and there may be cases also of such extreme intensity, as at once to produce that state; but if PULSELESSNESS and the other appalling symptoms be any criterion by which to judge of the intensity of the disease, these, when present, afford no grounds whatever for excluding hope, as the cases above quoted will show. It may savour of repetition, but there have been so many errors entertained on the subject that I cannot here part with it without emphatically renewing the declaration, that there is no assignable condition of a patient in the stage of collapse, which can forbid the employment of calomel in doses small and frequently repeated for his cure; and as no injury, nor even inconvenience of any kind can be inflicted on the patient by the calomel, be the quantity required to be taken what it may, so, likewise, no resistance to its remedial effects, however it may be prolonged, can warrant our despair of success, or of our abandoning a right onward and uninterrupted perseverance in the administration of the medicine so long as the stage of collapse continues.



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